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The Law Offices of John C. Scott, LLC
c/o PortfolioIP
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
ADDY, ANTHONY S	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/690,278	PEEK, GREG A.	
	Examiner	Art Unit	
	ANTHONY S. ADDY	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,8,12,13,16-20,22,23 and 26-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 8, 12-13, 16-20, 22-23 and 26-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment filed on November 24, 2008. **Claims 1-4, 8, 12-13, 16-20, 22-23** and **26-37** are pending in the present application.

Response to Arguments

2. Applicant's arguments with respect to **claims 1-4, 8, 12-13, 16-20, 22-23** and **26-37** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 2, 4, 8, 12-13 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1 (hereinafter Chuah)** and further in view of **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)**.

Regarding claim 1, Chuah discloses a method (see Fig. 8) comprising: at an access point (*e.g., access point 138*) in a wireless network that includes a first wireless transceiver (*e.g., 802.11(a) transceiver* 420_1) following a first wireless standard (*i.e., the IEEE 802.11(a) standard)* and a second wireless transceiver (*e.g., 802.11(b) transceiver* 420_{22}) following a second wireless standard (*i.e., the IEEE 802.11(b) standard)* to provide wireless network access for wireless client devices (*e.g., group of mobile hosts* 150_{11} *through* 150_{nr}) (see p. 2 [0020], p. 3 [0034] and Fig. 4).

Chuah fails to explicitly teach a method comprising: determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver.

However, Chuah teaches load balancing may be provided in an instance where for example, wireless transceiver 420_{21} is primarily being utilized in an access point 138 that includes a plurality of wireless transceivers 420, and in an effort to provide load balancing to relieve wireless transceiver 420_{21} from over usage which results in diminished bandwidth capacity for each user associated with the wireless transceiver 420_{21}, one or more mobile hosts 150 sharing said wireless transceiver 420_{21} may be moved to a secondary transceiver (*e.g., wireless transceiver* 420_{22}) in the same access point 138 to thereby relieve wireless transceiver 420_{21} from over usage, thereby improving QOS at the access point 138 (see p. 6 [0065-0066] and p. 7 [0067] and Fig. 4). According to Chuah, the communications protocol of the system performs load balancing while the users are currently engaged in a session, in a seamless manner without interruption (see p. 8 [0085).

In addition, Johnson teaches a base station including a first transceiver operating at a first carrier frequency and adapted for communication with *mobile stations* in said inner area; and a second transceiver operating at a second carrier frequency adapted for communication with *mobile stations* in said outer area (see col. 2, lines 26-31).

According to Johnson, the mobile stations not only measure the received signals level from the serving base station, but also the received signal quality, and on the basis of the signal level and quality measurements, it is possible to identify degraded communication which can be used as a basis for the base station to handover a mobile station to a new and better quality channel on the same base station, which is known as intra cell handover (see col. 7, lines 44-61). For example, Johnson teaches once a decision has been made to perform an intra cell handover due to a degraded signal quality of a mobile station, the base station selects a new transceiver within the current base station to service the mobile station with the degraded signal (see col. 7, lines 44-67). One of ordinary skill in the art further recognizes that the teaching of Johnson that the first and second transceivers service a *plurality of mobile stations* in said inner/outer area within a cell area, thus shows that mobile stations within said inner area share the first transceiver and mobile stations within said outer area share the second transceiver, hence moving a mobile station with a degraded signal quality to a new transceiver within the current base station meets the claimed limitations of "determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver."

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah with the teachings of Johnson to include a method of

determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver, in order to increase capacity within a base station as taught by Johnson (see col. 2, lines 13-15 & 59-67).

Regarding claim 2, Chuah in view of Johnson teaches all the limitations of claim 1. Chuah in view of Johnson further teaches a method, wherein: determining includes estimating current usage of transceivers of said access point that are available to service wireless client devices (see *Chuah*, p. 6 [0065-0066] and p. 7 [0067]).

Regarding claim 4, Chuah in view of Johnson teaches all the limitations of claim 1. Chuah in view of Johnson further teaches a method, wherein: moving includes sending a command to said at least one wireless client device having a low quality signal instructing said wireless client device having a low quality signal to move to said second wireless transceiver (see *Johnson*, col. 7, line 67 through col. 8, line 5).

Regarding claim 8, Chuah in view of Johnson teaches all the limitations of claim 1. Chuah in view of Johnson further teaches a method, wherein: moving said wireless client device having a low quality signal to said second wireless transceiver includes moving said wireless client device having a low quality signal to another frequency band (see *Johnson*, col. 7, line 67 through col. 8, line 5).

Regarding claim 12, Chuah discloses an apparatus (see Fig. 4; *shows an access point 138*) comprising: a first wireless transceiver (*e.g., 802.11(a) transceiver* 420_1) configured in accordance with a first wireless standard (*i.e., the IEEE 802.11(a) standard)* to operate within a first channel (see p. 3 [0034-0035] and Fig. 4; *shows an 802.11(a) transceiver operating within a first channel*); a second wireless transceiver (*e.g., 802.11(b) transceiver* 420_{22}) configured in accordance with a second wireless standard (*i.e., the IEEE 802.11(b) standard)* to operate within a second channel (see p. 3 [0034-0035] and Fig. 4; shows an 802.11(b) transceiver operating within a second channel), wherein said second channel is different from said first channel (see p. 3 [0035]); and a controller (*processor 402 reads on a controller*) to move a first wireless client device (*e.g., mobile host 150, which reads on a remote wireless client device*) from said first channel to said second channel (see p. 6 [0066], p. 7 [0067] and Figs 1 & 4; shows a mobile host 150 and a processor 402).

Chuah fails to explicitly teach said controller moves said first wireless client device from said first channel to said second channel when it is determined that said first wireless client device has a low quality signal and is sharing said first wireless transceiver with a second wireless client device that has a high quality signal.

However, Chuah teaches load balancing may be provided in an instance where for example, wireless transceiver 420_{21} is primarily being utilized in an access point 138 that includes a plurality of wireless transceivers 420, and in an effort to provide load balancing to relieve wireless transceiver 420_{21} from over usage which results in diminished bandwidth capacity for each user associated with the wireless transceiver

420_{21}, one or more mobile hosts 150 sharing said wireless transceiver 420_{21} may be moved to a secondary transceiver (*e.g., wireless transceiver* 420_{22}) in the same access point 138 to thereby relieve wireless transceiver 420_{21} from over usage, thereby improving QOS at the access point 138 (see p. 6 [0065-0066] and p. 7 [0067] and Fig. 4). In addition, Chuah teaches the plurality of wireless transceivers operate in different frequency channels (see p. 3 [0035]), thus showing that the one or more mobile hosts 150 are moved from different frequency operating channels when the one or mobile hosts 150 are handed-off between the different wireless transceivers within the same access point.

In addition, Johnson teaches a base station including a first transceiver operating at a first carrier frequency and adapted for communication with *mobile stations* in said inner area; and a second transceiver operating at a second carrier frequency adapted for communication with *mobile stations* in said outer area (see col. 2, lines 26-31). According to Johnson, the mobile stations not only measure the received signals level from the serving base station, but also the received signal quality, and on the basis of the signal level and quality measurements, it is possible to identify degraded communication which can be used as a basis for the base station to handover a mobile station to a new and better quality channel on the same base station, which is known as intra cell handover (see col. 7, lines 44-61). For example, Johnson teaches once a decision has been made to perform an intra cell handover due to a degraded signal quality of a mobile station, the base station selects a new transceiver within the current base station to service the mobile station with the degraded signal (see col. 7, lines 44-

67). One of ordinary skill in the art further recognizes that the teaching of Johnson that the first and second transceivers service a *plurality of mobile stations* in said inner/outer area within a cell area, thus shows that mobile stations within said inner area share the first transceiver and mobile stations within said outer area share the second transceiver, hence moving a mobile station with a degraded signal quality to a new transceiver within the current base station meets the claimed limitations of "determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver."

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah with Johnson to include an apparatus, wherein said controller moves said first wireless client device from said first channel to said second channel when it is determined that said first wireless client device has a low quality signal and is sharing said first wireless transceiver with a second wireless client device that has a high quality signal, in order to increase capacity within a base station as taught by Johnson (see col. 2, lines 13-15 & 59-67).

Regarding claim 13, Chuah in view of Johnson teaches all the limitations of claim 12. Chuah in view of Johnson further teaches an apparatus, further comprising: at least one other wireless transceiver to operate within at least one other channel, wherein said

at least one other channel is different from said first and second channels (see *Chuah*, p. 3 [0034-0035] and Fig. 4).

Regarding claim 16, Chuah in view of Johnson teaches all the limitations of claim 12. Chuah in view of Johnson further teaches an apparatus, wherein: said controller moves said first wireless client device from said first channel to said second channel by sending a command to said first wireless client device instructing said wireless client device to move to said second channel (see *Johnson*, col. 7, line 67 through col. 8, line 5).

Regarding claim 17, Chuah in view of Johnson teaches all the limitations of claim 12. Chuah in view of Johnson further teaches an apparatus, wherein: said apparatus includes a wireless access point (see *Chuah*, p. 3 [0032] and Fig. 4; shows an access point 138).

Regarding claim 18, Chuah teaches a computer readable storage medium having instructions stored thereon that, when executed by a computing platform (see abstract and p. 3 [0032]), result in: at an access point (*e.g., access point 138*) in a wireless network (100) that includes a first wireless transceiver (*e.g., 802.11(a) transceiver* 420_1) following a first wireless standard (*i.e., the IEEE 802.11(a) standard)* and a second wireless transceiver (*e.g., 802.11(b) transceiver* 420_{22}) following a second wireless standard (*i.e., the IEEE 802.11(b) standard)* to provide wireless network access for wireless client devices (*e.g., group of mobile hosts* 150_{11} *through* 150_{nl}) (see p. 2 [0020], p. 3 [0034] and Fig. 4).

However, Chuah fails to explicitly teach determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver.

However, Chuah further teaches load balancing may be provided in an instance where for example, wireless transceiver 420_{21} is primarily being utilized in an access point 138 that includes a plurality of wireless transceivers 420, and in an effort to provide load balancing to relieve wireless transceiver 420_{21} from over usage which results in diminished bandwidth capacity for each user associated with the wireless transceiver 420_{21}, one or more mobile hosts 150 sharing said wireless transceiver 420_{21} may be moved to a secondary transceiver (*e.g., wireless transceiver* 420_{22}) in the same access point 138 to thereby relieve wireless transceiver 420_{21} from over usage, thereby improving QOS at the access point 138 (see p. 6 [0065-0066] and p. 7 [0067] and Fig. 4). According to Chuah, the communications protocol of the system performs load balancing while the users are currently engaged in a session, in a seamless manner without interruption (see p. 8 [0085).

In addition, Johnson teaches a base station including a first transceiver operating at a first carrier frequency and adapted for communication with *mobile stations* in said inner area; and a second transceiver operating at a second carrier frequency adapted for communication with *mobile stations* in said outer area (see col. 2, lines 26-31).

According to Johnson, the mobile stations not only measure the received signals level from the serving base station, but also the received signal quality, and on the basis of the signal level and quality measurements, it is possible to identify degraded communication which can be used as a basis for the base station to handover a mobile station to a new and better quality channel on the same base station, which is known as intra cell handover (see col. 7, lines 44-61). For example, Johnson teaches once a decision has been made to perform an intra cell handover due to a degraded signal quality of a mobile station, the base station selects a new transceiver within the current base station to service the mobile station with the degraded signal (see col. 7, lines 44-67). One of ordinary skill in the art further recognizes that the teaching of Johnson that the first and second transceivers service a *plurality of mobile stations* in said inner/outer area within a cell area, thus shows that mobile stations within said inner area share the first transceiver and mobile stations within said outer area share the second transceiver, hence moving a mobile station with a degraded signal quality to a new transceiver within the current base station meets the claimed limitations of "determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver."

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah with Johnson to include the step of determining

whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver, in order to increase capacity within a base station as taught by Johnson (see col. 2, lines 13-15 & 59-67).

Regarding claim 19, Chuah in view of Johnson teaches all the limitations of claim 18. Chuah in view of Johnson further teaches wherein: determining includes estimating current usage of transceivers of said access point that are available to service wireless client devices (see *Chuah*, p. 6 [0065-0066] and p. 7 [0067]).

Regarding claim 20, Chuah in view of Johnson teaches all the limitations of claim 18. Chuah in view of Johnson further teaches wherein: moving includes sending a command to said wireless client device having a low quality signal instructing said wireless client device having a low quality signal to move to said second wireless transceiver (see *Johnson*, col. 7, line 67 through col. 8, line 5).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1 (hereinafter Chuah)** and **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)** as applied to claim 1 above, and further in view of **Ganz et al., U.S. Patent Number 6,049,549 (hereinafter Ganz)**.

Regarding claim 3, Chuah in view of Johnson teaches all the limitations of claim 1, but fails to explicitly teach, wherein: determining includes analyzing data rates requested by wireless client devices associated with said first wireless transceiver.

In an analogous field of endeavor, Ganz teaches a resource manager allocates bandwidth to sessions by taking into account the data rate requested and the achievable throughput of wireless stations in a wireless local area network (WLAN) environment in order to allow a requested data rate to be achieved by the wireless stations and thereby increase the total throughput of the system and provide proper quality of service support for real-time applications (see abstract, col. 2, lines 16-25 and Fig. 1).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah and Johnson with the teachings of Ganz to include a method, wherein: determining includes analyzing data rates requested by wireless client devices associated with said first wireless transceiver, in order to allow a requested data rate to be achieved by the wireless stations and to thereby increase the total throughput of the system and provide a proper quality of service support for real-time applications as taught by Ganz (see abstract and col. 2, lines 16-39).

6. Claims 29, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1 (hereinafter Chuah)** and **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)** as applied to

claims 1, 12 and 18 above, and further in view of **Esteves et al., U.S. Patent Number 6,687,510 (hereinafter Esteves)**.

Regarding claims 29, 32 and 35, Chuah in view of Johnson teaches all the limitations of claims 1, 12 and 18. Chuah in view of Johnson fails to explicitly teach a method and apparatus, wherein: the signal quality of a wireless client device is determined based upon a data rate requested by the wireless client device. However, determining the signal quality of a wireless client device based upon a data rate requested by the wireless client device is very well known in the art as taught for example by Esteves.

In an analogous field of endeavor, Esteves teaches a base station determining the signal quality of a remote station based upon a data rate requested by the remote station (see col. 9, lines 47-52).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah and Johnson with the teachings of Esteves to include a method and apparatus, wherein: the signal quality of a wireless client device is determined based upon a data rate requested by the wireless client device, in order to determine how much power to allocate to a reverse link channel for communicating information from a remote station to a base station as taught by Esteves (see col. 3, line 65 through col. 4, line 3).

7. Claims 27, 28, 30, 31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1**

(hereinafter Chuah) and **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)** as applied to claims 1, 12 and 18 above, and further in view of **Well Known Prior Art – Official Notice**.

Regarding claims 27, 28, 30, 31, 33 and 34, Chuah in view of Johnson teaches all the limitations of claims 1, 12 and 18. Chuah further teaches a method and apparatus, wherein: said first wireless standard is IEEE 802.11a (see p. 3 [0034]) and said second wireless standard is IEEE 802.11b (see p. 3 [0034-0035]). Chuah further teaches the access point may support IEEE 802.11 (g) or more communication protocols (see p. 3 [0034] and Fig. 4), but fails to explicitly teach wherein: said first wireless standard is a standard that achieves better throughput than said second wireless standard and said second wireless standard is a standard that achieves better range than said first wireless standard; and said second wireless standard is IEEE 802.11b,g.

However, the examiner takes Official Notice that it is very well known in the art that a first wireless standard such as IEEE 802.11a is a standard that achieves better throughput than a second wireless standard such as IEEE 802.11b,g and said second wireless standard is a standard that achieves better range than said first wireless standard. Furthermore, one of ordinary skill in the art further recognizes that it would have been obvious to include a standard such as IEEE 802.11b,g, since Chuah teaches the access point may support IEEE 802.11 (a), (b) and (g) or more communication protocols (see p. 3 [0034] and Fig. 4).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah and Johnson, wherein: said first wireless standard is a standard that achieves better throughput than said second wireless standard and said second wireless standard is a standard that achieves better range than said first wireless standard; and said second wireless standard is IEEE 802.11b,g, in order to allow a mobile device to roam, while providing continuous uninterrupted services as taught by Chuah (see p. 8 [0077 7 0085]).

8. Claims 22, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1 (hereinafter Chuah)** and **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)** and further in view of **Fox et al., U.S. Patent Number 6,879,807 (hereinafter Fox)**.

Regarding claim 22, Chuah teaches a system comprising: a first wireless transceiver (*e.g., 802.11(a) transceiver* 420_1), coupled to a first antenna (*e.g., antenna* 422_1) and configured in accordance with a first wireless standard (*i.e., the IEEE 802.11(a) standard)* to operate within a first channel (see p. 3 [0034-0035] and Fig. 4; *shows an 802.11(a) transceiver operating within a first channel*); a second wireless transceiver (*e.g., 802.11(b) transceiver* 420_{22}), coupled to a second antenna (*e.g., antenna* 422_3) and configured in accordance with a second wireless standard (*i.e., the IEEE 802.11(b) standard)* to operate within a second channel (see p. 3 [0034-0035] and Fig. 4; shows an 802.11(b) transceiver operating within a second channel), wherein said second channel is different from said first channel (see p. 3 [0035]); and a

controller (*i.e., processor 402 reads on a controller*) to move a first wireless client device (*e.g., mobile host 150, which reads on a first wireless client device*) from said first channel to said second channel (see p. 6 [0066], p. 7 [0067] and Figs 1 & 4; shows a mobile host 150 and a processor 402).

Chuah fails to explicitly teach said controller moves said first wireless client device from said first channel to said second channel when it is determined that said first wireless client device has a low quality signal and is sharing said first wireless transceiver with a second wireless client device that has a high quality signal.

However, Chuah teaches load balancing may be provided in an instance where for example, wireless transceiver 420_{21} is primarily being utilized in an access point 138 that includes a plurality of wireless transceivers 420, and in an effort to provide load balancing to relieve wireless transceiver 420_{21} from over usage which results in diminished bandwidth capacity for each user associated with the wireless transceiver 420_{21}, one or more mobile hosts 150 sharing said wireless transceiver 420_{21} may be moved to a secondary transceiver (*e.g., wireless transceiver* 420_{22}) in the same access point 138 to thereby relieve wireless transceiver 420_{21} from over usage, thereby improving QOS at the access point 138 (see p. 6 [0065-0066] and p. 7 [0067] and Fig. 4). In addition, Chuah teaches the plurality of wireless transceivers operate in different frequency channels (see p. 3 [0035]), thus showing that the one or more mobile hosts 150 are moved from different frequency operating channels when the one or mobile hosts 150 are handed-off between the different wireless transceivers within the same access point.

In addition, Johnson teaches a base station including a first transceiver operating at a first carrier frequency and adapted for communication with *mobile stations* in said inner area; and a second transceiver operating at a second carrier frequency adapted for communication with *mobile stations* in said outer area (see col. 2, lines 26-31). According to Johnson, the mobile stations not only measure the received signals level from the serving base station, but also the received signal quality, and on the basis of the signal level and quality measurements, it is possible to identify degraded communication which can be used as a basis for the base station to handover a mobile station to a new and better quality channel on the same base station, which is known as intra cell handover (see col. 7, lines 44-61). For example, Johnson teaches once a decision has been made to perform an intra cell handover due to a degraded signal quality of a mobile station, the base station selects a new transceiver within the current base station to service the mobile station with the degraded signal (see col. 7, lines 44-67). One of ordinary skill in the art further recognizes that the teaching of Johnson that the first and second transceivers service a *plurality of mobile stations* in said inner/outer area within a cell area, thus shows that mobile stations within said inner area share the first transceiver and mobile stations within said outer area share the second transceiver, hence moving a mobile station with a degraded signal quality to a new transceiver within the current base station meets the claimed limitations of "determining whether a wireless client device having a low quality signal is sharing said first wireless transceiver with a wireless client device having a high quality signal; and when a wireless client device having a low quality signal is sharing said first wireless transceiver with a

wireless client device having a high quality signal, moving said wireless client device having a low quality signal to said second wireless transceiver."

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah with Johnson to include a system, wherein said controller moves said first wireless client device from said first channel to said second channel when it is determined that said first wireless client device has a low quality signal and is sharing said first wireless transceiver with a second wireless client device that has a high quality signal, in order to increase capacity within a base station as taught by Johnson (see col. 2, lines 13-15 & 59-67).

Furthermore, Chuah in view of Johnson fails to explicitly teach said first and second antennas are dipole antennas coupled to said first wireless transceiver and said second wireless transceiver. However a dipole antenna coupled to a wireless transceiver in an access point is very well known in the art as taught for example by Fox.

In an analogous field of endeavor, Fox teaches a wireless access unit comprising a dipole antenna electrically coupled to a wireless transceiver (see col. 3, lines 20-28 & 57-66 and Figs. 1 & 2).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah and Johnson with the teachings of Fox to include a system, comprising: at least one first dipole antenna coupled to said first wireless transceiver; and at least one second dipole antenna coupled to said second wireless transceiver, in order to improve antenna reception and performance, which provides

increased speed and bandwidth for a computing device, as well as an increased reliability in a wireless inter-connection to a remote network as taught by Fox (see col. 1, lines 33-35 and col. 5, lines 23-28).

Regarding claim 23, the combination of Chuah, Johnson and Fox teaches all the limitations of claim 22. The combination of Chuah, Johnson and Fox further teaches a system, further comprising: at least one other wireless transceiver to operate within at least one other channel, wherein said at least one other channel is different from said first and second channels (see *Chuah*, p. 3 [0034-0035] and Fig. 4).

Regarding claim 26, the combination of Chuah, Johnson and Fox teaches all the limitations of claim 22. The combination of Chuah, Johnson and Fox further teaches a system, wherein: said controller moves said first wireless client device from said first channel to said second channel by sending a command to said first wireless client device instructing said wireless client device to move to said second channel (see *Johnson*, col. 7, line 67 through col. 8, line 5).

9. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chuah et al., U.S. Publication Number 2005/0059396 A1 (hereinafter Chuah)** and **Johnson, U.S. Patent Number 5,839,071 (hereinafter Johnson)** and **Fox et al., U.S. Patent Number 6,879,807 (hereinafter Fox)** as applied to claim 22 above, and further in view of **Well Known Prior Art – Official Notice**.

Regarding claims 36 and 37, the combination of Chuah, Johnson and Fox teaches all the limitations of claim 22. Chuah further teaches a method and apparatus,

wherein: said first wireless standard is IEEE 802.11a (see p. 3 [0034]) and said second wireless standard is IEEE 802.11b (see p. 3 [0034-0035]). Chuah further teaches the access point may support IEEE 802.11 (g) or more communication protocols (see p. 3 [0034] and Fig. 4), but fails to explicitly teach wherein: said first wireless standard is a standard that achieves better throughput than said second wireless standard and said second wireless standard is a standard that achieves better range than said first wireless standard; and said second wireless standard is IEEE 802.11b,g.

However, the examiner takes Official Notice that it is very well known in the art that a first wireless standard such as IEEE 802.11a is a standard that achieves better throughput than a second wireless standard such as IEEE 802.11b,g and said second wireless standard is a standard that achieves better range than said first wireless standard. Furthermore, one of ordinary skill in the art further recognizes that it would have been obvious to include a standard such as IEEE 802.11b,g, since Chuah teaches the access point may support IEEE 802.11 (a), (b) and (g) or more communication protocols (see p. 3 [0034] and Fig. 4).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Chuah, Johnson and Fox, wherein: said first wireless standard is a standard that achieves better throughput than said second wireless standard and said second wireless standard is a standard that achieves better range than said first wireless standard; and said second wireless standard is IEEE 802.11b,g, in order to allow a mobile device to roam, while providing continuous uninterrupted services as taught by Chuah (see p. 8 [0077 & 0085]).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johansson et al., U.S. Patent Number 6,542,482 discloses load sharing for MCPA-equipped base station.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY S. ADDY whose telephone number is (571)272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. S. A./
Examiner, Art Unit 2617

/Alexander Eisen/

Supervisory Patent Examiner, Art Unit 2617